

**MARCH 2017**

## **Newsletter N°1**

Watch on proteins and their applications



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# 1. Raw material production

## *Grain sector*

### **Improvement of the management of crop breeding practices through the utilization of robotic and sensing technologies – 23/03/2017**

CM Senior Systems Scientist George Kantor is part of the multidisciplinary research endeavor FarmView, whose primary goal is the sustained improvement of the management of crop breeding practices through the utilization of robotic and sensing technologies.

With a specific interest in the coarse dry grass grain sorghum [...]

Source : [azosensors](#)

### **Organic grain terminal set to be built in Ukraine – 14/03/2017**

LLC Bio-Line-Reni, an agro science supply company, plans to build an organic grain handling terminal at the Reni Seaport in Odessa, Ukraine, according to a report from UkrAgroConsult. The technology of the complex will comply with standards and rules of Ukraine's Research Institute of Organic Agriculture (FIBL). [...]

Source : [world-grain](#)

### **Ardent Mills launches North American-grown quinoa program – 09/03/2017**

Ardent Mills on March 9 said it is launching Great Plains Quinoa, which features a quinoa growing network in North America and will offer up to a two-year price guarantee. The program will bring the transparency, scale and consistent quality needed to support mainstream growth of quinoa with consumers, food manufacturers, bakeries, retailers and restaurants in the United States and Canada, according to Denver-based Ardent Mills. [...]

Source : [world-grain](#)

### **Abstract – Identification and Characterization of High Protein Oat Lines from a Mutagenised oat population – 08/03/2017**

Oat is an excellent source of high-quality proteins. The protein content in cultivated oat is about 12% -15 %. Oats with even higher protein contents would have great potential as a vegetative protein source. From a mutagenised oat population, 230 lines with seed protein levels of 15% or higher were identified from green house grown plants. Fifteen lines with protein levels ranging between 17 - 24% were chosen for further studies. The high protein character was confirmed by two consecutive propagations in the field. [...]

Source : [sciencedirect](#)

### **General Mills invests in 'planet-friendly' grain – 07/03/2017**

General Mills, Inc. has approved a \$500,000 charitable contribution to support research on Kernza, a perennial grain with deep roots that show promise in providing benefits in soil health, carbon sequestration, water retention and wildlife habitat. Minneapolis, Minnesota, U.S.-based General Mills is the parent company of Cascadian Farm, which has agreed to buy an initial amount of Kernza. The grain tastes sweet and nutty and may be used as an ingredient for cereal and snacks. [...]

Source : [world-grain](#)

### **BYU researchers develop a new strain of quinoa – 02/03/2017**

BYU plant and wildlife sciences professors Rick Jellen and Jeff Maughan have been working to create new strains of quinoa, a grain native to the Americas, in order to create alternatives to the most commonly eaten grains in the world. The study gives the scientific community access to the full genome sequence of quinoa by being published in "Nature," a science journal. [...]

Source : [daily universe](#)

### **Quinta Quinoa receives Innovation Award – 01/03/2017**

The Ontario Farm Fresh Marketing Association (OFFMA) has given its 2017 Food Innovation Award to Quinta Quinoa, the brand from Katan Kitchens. OFFMA presented the award at the 2017 Awards of Excellence Banquet, which took place in Niagara Falls, Ont. on Feb. 21, 2017.

Quinta Quinoa is the first high-nutrient quinoa to be grown and processed in Ontario. [...]

Source : [foodincanada](#)

### **Bühler focuses on reducing mycotoxin levels in grain – 01/03/2017**

Bühler has been partnering with science and applied research for many years in order to learn more about the value of integrating cleaning measures along the value chain. One such collaboration is with the experts from the European Horizon2020 project, MycoKey, [...]

Source : [world-grain](#)

## **Oilseed & Oleo-proteaginous sector**

### **Saskatchewan Pulse Growers studies market for faba beans – 23/03/2017**

Saskatchewan Pulse Growers commissioned LMC International and the economist Joe Feyertag to report on the market potential for fabas.

Global demand for faba beans is now about four million tonnes, up from about 3.2 million tonnes in 1995. Nearly half that growth is in Ethiopia, Feyertag said. France, Morocco, Australia, Sudan, China, Egypt and Canada have also seen growth. Consumption has declined in the Mediterranean basin. [...]

Source : [grainnews](#)

### **Indian Farmers switch crops as lentil prices plunge – 21/03/2017**

Millions of Indian farmers look set to switch from growing pulses and oilseeds after a government campaign to boost output became a victim of its own success by flooding markets with the crops, used in everything from fragrant curries to sticky desserts. Storehouses are overflowing with commodities such as lentils and soybeans after waves of farmers answered Prime Minister Narendra Modi's call last summer to ramp up local production to cut a hefty import bill, driving prices sharply lower. [...]

Source : [financialexpress](#)

### **Canola's value to Canadian economy skyrockets – 16/03/2017**

Over the last decade, the value of canola to the Canadian economy has increased C\$19.3 billion, or 250%, according to a report released March 2 by the Canola Council of Canada. In addition, the total wage impact doubled and the number of jobs increased by 41%. The total value averaged C\$26.7 billion per year over the three years from 2012-13 to 2014-15. The industry generated 250,000 jobs and C\$11.2 billion in wages for Canadians in that time period. [...]

Source : [world-grain](#)

### **Chickpea seed supply coming up short – 16/03/2017**

Farmers hoping to raise chickpeas this year will find tight seed supplies across the nation, industry leaders say. Experienced chickpea growers will likely have seed, said Tim McGreevy, CEO of the USA Dry Pea and Lentil Council in Moscow, Idaho. But farmers looking to try the crop for the first time and having trouble finding seed should contact suppliers now to get their name on the list for next year. McGreevy attributes the shortage to high demand, low wheat and barley prices, and problems with the seed harvest in Canada, leading growers there to buy U.S. seed. [...]

[...]

Source : [capitalpresse](#)

### **From new beans to ancient plants, drought-busting crops take root – 06/04/2017**

As farmers worldwide experience more frequent drought and erratic rainfall linked to climate change, the race to find and improve drought-resistant crops grows ever more important. In recent decades, research has increased to see how food crops cope with dry conditions, and scientists are breeding and crossing seeds to make them more drought-tolerant.

Intercropping - Staple food crops like sorghum, cassava, sweet potato, pearl millet, cowpea and groundnut are naturally more drought-tolerant than maize. [...]

Source : [reliefweb](#)

### **India rejects extension on pulse imports in blow to Canada's largest market – 23/02/2017**

India has rejected a long-standing exemption on pest treatment for peas and lentils in a blow to Canada's top export market for the crops. [...]

Source : [ctvnews](#)

## **Milk proteins**

### **Dairy farmer pioneers new protein in milk – 10/04/2017**

The Holstein herd at Bridge Farm are not just your ordinary dairy cows. Responding to the growing needs of a new consumer market within the dairy industry, Neale Sadler is specifically breeding them to produce milk which contains a particular type of protein called A2. It is this protein, according to medical research, which has been scientifically proven to help those who physically suffer from drinking cow's milk to experience relief when switching to A2 milk. And with one-in-four people diagnosed as dairy intolerant, it is an increasingly lucrative market for the sector. [...]

Source : [fginsight](#)

## **Alternative proteins**

### **Irish insect protein biotech firm secures €1m funding for industrial scale-up – 10/04/2017**

Three young Irish entrepreneurs are on the cusp of bringing to market insect protein and oil after securing second round funding of €1m for their “revolutionary” insect farming venture, Hexafly. [...]

Source : [feednavigator](#)

### **Abstract - Nitrate concentration-shift cultivation to enhance protein content of heterotrophic microalga *Chlorella vulgaris*: Over-compensation strategy – 27/02/2017**

Protein production from microalgae requires both high cell density during cultivation and high protein content in cells. Heterotrophic microalgae can achieve high cell density, and yet are confronted with the problem of low protein content. Based on over-compensation strategy, a new concentration-shift method was proposed to cultivate heterotrophic *Chlorella vulgaris*, aiming to increase protein content. With a prior starvation period, microalgae utilized more nitrate and accumulated more proteins compared to one-stage cultivation. [...]

Source : [sciencedirect](#)

### **South Africa's AgriProtein is collaborating with engineering group, Christof Industries, to build up to 25 cost-efficient, high-volume fly farms a year in global locations – 13/02/2017**

The two companies plan to roll out 100 factories by 2024 and a further 100 by 2027. The deal sees Christof Industries delivering factories on a turnkey basis as AgriProtein's Engineering, Procurement & Construction (EPC) partner, while local licensees of AgriProtein's technology in Asia, the Middle East, Europe and the Americas, will operate the Black Soldier Fly larvae based farms. [...]

Source : [foodnavigator](#)

### **Univar and TerraVia ink deal to bring whole algae to Europe – 13/02/2017**

Ingredients distributor Univar has inked a deal to bring TerraVia's AlgaVia brand of whole algae ingredients to Europe. US biotech firm TerraVia, formerly known as Solazyme, has a number of microalgae-based products approved for the EU market, including a lipid-rich whole algae available

in golden and cream which can replace eggs and dairy fat in bakery, beverages and desserts, as well as other applications. [...]

Source : [Foodnavigator](#)

### **Trans-sector**

#### **Cargill strengthens North American Non-GMO offering – 15/03/2017**

Furthering its commitment to help food and beverage customers address growing consumer demand for non-GMO product offerings, Cargill has initiated an identity preservation process and several additional Non-GMO Project Verified food ingredients. [...]

Source : [world-grain](#)

#### **Rising demand for organic and non-GMO grains outpaces U.S. production – 22/02/2017**

Increasing consumer demand for organic and non-GMO foods led to a sharp rise in organic grain imports in 2016 — prompting food manufacturers to explore new incentives for U.S. growers transitioning to organic production, according to a new report from CoBank. While U.S. production of non-GMO crops has risen, domestic production of organic corn and soybeans remains well short of demand. [...]

Source : [fooddive](#)

## 2. Fractioning, extraction and transformation

### *Grain sector*

**Abstract - Quinoa proteins (Chenopodium quinoa Willd.) fractionated by ultrafiltration using ceramic membranes: The role of pH on physicochemical and conformational properties**

Ultrafiltration is a technique used for the separation and recovery of proteins according to their molecular weight. The efficiency of the process can be controlled by control of the operational parameters, which can affect the structure and functionality of proteins in the final product. The aim of this study was to evaluate how the ultrafiltration process using ceramic membranes affects the physicochemical and conformational characteristics of quinoa protein fractions at two pHs above the isoelectric point of quinoa protein extracts. [...]

Source : [sciencedirect](#)

**Abstract - Protein interactions during flour mixing using wheat flour with altered starch - 23/03/2017**

Wheat grain proteins responses to mixing and thermal treatment were investigated using Mixolab-dough analysis systems with flour from two cultivars, Ventura-26 (normal amylose content) and Ventura-19 (reduced amylose content). Size exclusion high performance liquid chromatography (SE-HPLC) and two-dimensional gel electrophoresis (2-DGE) analysis revealed that, stress associated and metabolic proteins largely interacted with dough matrix of Ventura-26 after 26 min (56 °C); gliadins, avenin-like b proteins, LMW-GSs, and partial globulins showed stronger interactions within the dough matrix of Ventura-26 at 32 min/C3 (80 °C), thereafter, however, [...]

Source : [sciencedirect](#)

**Idaho quinoa buyer outgrowing processing facility – 20/03/2017**

A local businessman who has established Eastern Idaho as the major U.S. production area for quinoa says recent contracts have maxed out his processing capacity, and he intends to build a much larger facility. [...]

Source : [capitalpress](#)

**Italgrani USA Announces Grain Milling Expansion – 28/02/2017**

Italgrani USA announced the company was investing to fund a major expansion to its grain milling operations in St Louis. Built in 1987, the current durum mill has a capacity of 20,000 cwt per day and is supplied by an adjacent four million-bushel grain elevator. [...]

Source : [oilseedandgrain](#)

**Abstract - The composition, extraction, functionality and applications of rice proteins: a review – 27/02/2017**

Rice is composed of four protein fractions, namely albumin (water-soluble), globulin (salt-soluble), glutelin (alkali-soluble), which represents the dominant protein in brown and milled rice, and prolamin (alcohol-soluble), a minor protein in all rice milling fractions. Different methods to extract proteins from rice, including alkaline, enzymatic and physical methods, have been, and continue to be, evaluated for their efficacy, and some have been applied industrially. However, only a limited amount of studies have described the functional properties of rice proteins and how these can be improved by means of enzymatic hydrolysis. Applications of intact rice proteins are limited due to their poor solubility in water. However, hydrolysed rice proteins [...]

Source : [sciencedirect](#)

**Oilseed sector**

**Abstract - Intensification of protein extraction from soybean processing materials using hydrodynamic cavitation – 06/2017**

High pressure homogenisation (HPH) has been investigated for its potential to aid the aqueous extraction of protein and other components from soybeans. HPH treatments (50–125 MPa) were applied to soy slurry and okara, the diluted waste stream from soybase production. Extraction yields of oil, protein and solids were calculated, and the feasibility of the technology was assessed. The most productive HPH treatment investigated improved extraction yields of protein up to 82% with a single pass of soy slurry at 100 MPa. In comparison, a maximal protein extraction yield of 70% has been achieved previously using ultrasound at lab-scale for 15 min (20 kHz, 65 W according to manual, 13 mm probe tip) (Preece et al., in press). Results showed [...]

Source : [sciencedirect](#)

**Abstract - Intensified soy protein extraction by ultrasound – 03/2017**

During soymilk production, aqueous extraction conditions are utilised resulting in suboptimal protein extraction yields. This research focuses on the intensification of extraction yields from soybeans using ultrasound and understanding the reasoning behind the results. Milled soybean slurry and okara samples were treated with ultrasound using a lab-scale probe system (20 kHz, 400 W) for 0, 0.5, 1, 5 and 15 min. Ultrasound increased the protein, oil and solids extraction yield from [...]

Source : [sciencedirect](#)

**Minnesota Soybean Processors to build plant in North Dakota – 27/03/2017**

Minnesota Soybean Processors (MnSP) and its subsidiary North Dakota Soybean Processors (NDSP) is taking steps toward construction of a \$240 million soybean processing plant. The plant will be located in Spiritwood, North Dakota, U.S., and will have a crushing capacity of 125,000 bushels of



soybeans per day. The facility would produce soybean meal, refined, bleached and deodorized soybean oil and biodiesel. The NDSP plant will produce 900,000 tons of [...]

Source : [world-grain](#)

**Abstract - Structural characterization and physicochemical properties of protein extracted from soybean meal assisted by steam flash-explosion with dilute acid soaking – 15/03/2017**

The aim of this work was to analyze the influence of steam flash-explosion (SFE) with dilute acid soaking pretreatment on the structural characteristics and physicochemical properties of protein from soybean meal (SBM). The pretreatment led to depolymerisation of soy protein isolate (SPI) and formation of new protein aggregation through non-disulfide covalent bonds, which resulted in broader MW distribution of SPI. The analysis of CD spectroscopy showed [...]

Source : [sciencedirect](#)

**Abstract - Impact of ultrasonic treatment on an emulsion system stabilized with soybean protein isolate and lecithin: Its emulsifying property and emulsion stability**

The present study aims to investigate the impact of ultrasonic treatment on the emulsifying property and emulsion stability of an emulsion system stabilized with soybean protein isolate (SPI) and lecithin. Ultrasonic parameters used were ultrasonic powers of 150, 300, and 450 W and ultrasonic durations of 12 and 24 min. Emulsifying properties of emulsions were all improved with different extents after ultrasonic treatments. The emulsion treated at 150 W & 24 min showing [...]

Source : [sciencedirect](#)

**Abstract - Polyphenol removal from sunflower seed and kernel: Effect on functional and rheological properties of protein isolates – 02/2017**

The present work was aimed to investigate the effect of polyphenols on functional and rheological properties of protein isolates obtained from sunflower seed and kernel. Protein isolates were obtained from both dephenolized and undephenolized meals of seed and kernel by isoelectric precipitation. Protein isolates from dephenolized meals had higher percentage of proteins than protein isolates from undephenolized meals. Concentration of proteins in kernel protein isolates was [...]

Source : [sciencedirect](#)

**Acute shortage of soybean meal in Russia – 03/03/2017**

While struggling to produce enough soybeans to meet domestic demand, Russia's heavy reliance on imports has led to an inevitable consequence on cost and supply. With acute shortages looming, what steps are being taken to fill the blanks?

Imports account for nearly 43% of soybean supplies in Russia as the country fails to produce enough to meet the demand of domestic feed mills. [...]

Source : [allaboutfeed](#)

**US20170020161 - Bacillus sp. strain with improved productivity of fermented soybean meal and method for producing fermented soybean meal using the same – Cj Cheiljedang Corporation - 28/02/2017**

The present invention relates to a *Bacillus amyloliquefaciens* K2G strain, which is excellent in removal of anti-nutritional factors and in protease activity, and shows excellent antimicrobial activity against pathogens and reduced productivity of viscous substances, a method for producing a fermented soybean meal using the strain, a fermented soybean meal produced therefrom, and a feed composition including the same. The fermented soybean meal prepared by *Bacillus amyloliquefaciens* K2G strain according to the present invention has few anti-nutritional [...]

Source : [Wipo](#)

**EP3131407- method for obtaining napin and cruciferin or a mixture thereof from rapeseed - Pilot Pflanzenöltechnologie Magdeburg E V – 22/02/2017**

Described is a method for obtaining a mixture of the rapeseed proteins napin and cruciferin, or the individual proteins, in pure form from waste rapeseed, wherein once a raw extract has been obtained using a suitable extraction medium the desired proteins are washed out of the raw extract in various washing stages at defined pH levels.

Source : [Wipo](#)

**Oleo-proteaginous sector**

**Abstract - Structuring colloidal oat and faba bean protein particles via enzymatic modification – 23/03/2017**

Oat and faba bean protein isolates were treated with transglutaminase from *Streptomyces mobaraensis* and tyrosinase from *Trichoderma reesei* to modify the colloidal properties of protein particles in order to improve their colloidal stability and foaming properties. Transglutaminase crosslinked faba bean protein extensively already with 10 nkat/g enzyme dosage. Oat protein was crosslinked to some extent with transglutaminase with higher dosages (100 and 1000 nkat/g). Transglutaminase increased the absolute zeta-potential values and reduced the particle size of oat protein particles. As a result, the colloidal stability and foaming properties were improved. [...]

Source : [sciencedirect](#)

**Pea processor sets up in Slemon Park – Canada – 08/03/2017**

A new pea processing business setting up in Slemon Park is expected to bring up to a dozen jobs to the Summerside area, the province says. Island native Chris Chivilo, a pulse processor in Western Canada, has returned to P.E.I. to set up New Leaf Essentials East. He will contract with local

farmers to produce about 5,000 acres of field peas and process them at the former potato chip plant in Slemon Park, according to a news release. [...]

Source : [ca.news](#)

### **Milk protein**

#### **Abstract - Functionality of whey proteins covalently modified by allyl isothiocyanate. Part 1 physicochemical and antibacterial properties of native and modified whey proteins at pH 2 to 7 – 04/2017**

Whey protein isolate (WPI) (~75%  $\beta$ -lactoglobulin ( $\beta$ -LG)) is frequently used in foods as a natural emulsifying agent. However, at an acidic pH value, its emulsification capacity is greatly reduced. The covalent attachment of natural electrophilic hydrophobic molecules to WPI proteins is a promising method for changing the physicochemical properties of WPI in favor of a higher functionality at acidic pH values. [...]

Source : [sciencedirect](#)

#### **Abstract - Whey protein–pectin soluble complexes for beverage applications – 02/2017**

There is a strong interest in the consumption of beverages containing whey proteins due to implications in health outcomes such as increased satiety and metabolic regulation. However, low thermal stability limits the conditions under which whey protein beverages can be formulated. Studies have shown that at a narrow pH range near the protein isoelectric points, whey proteins and polysaccharides self assemble into soluble complexes (SCs) that exhibit unique functionality. This study investigated the formation and thermal stability of SCs under conditions relevant to beverage applications. Complexes were [...]

Source : [sciencedirect](#)

#### **Fonterra's NZMP introduces new protein ingredient – 03/02/2017**

Fonterra's dairy ingredients brand NZMP has introduced a new ingredient that delivers at least 10% more protein than other standard whey proteins. With this launch, the company aims to capture a major market share in the \$10bn sports nutrition market. [...]

Source : [Food processing technology](#)

#### **WO/2017/037344 - Method for producing a milk-based product with reduced plasmin-activity - VALIO LTD – 09/03/2017**

The present invention relates to a method of inactivation of plasmin enzyme in a milk-based product, wherein casein and whey protein are separated from a milk raw material by microfiltration to provide a casein concentrate as a microfiltration retentate having a whey protein content of less than 20 wt.%, based on the total protein content of the concentrate, and a whey protein concentrate as a microfiltration permeate; the casein concentrate is subjected to a thermal

treatment at a temperature in the range of about 72°C to about 95°C to provide a thermally treated casein concentrate; and a milk-based product with a reduced plasmin activity comprising the thermally treated casein concentrate is provided. The milk-based products prepared by the method retain flawless organoleptic properties at different storage temperatures even under prolonged storage periods. [...]

Source : [Wipo](#)

#### **Abstract - Properties of whey proteins obtained from different whey streams – 03/2017**

The physio-chemical characteristics of whey proteins (WPs) in sweet, salty, native and acid whey were investigated and compared. WPs from acid whey were characterised by hydrophobically and covalently driven protein aggregation. Covalent aggregation in acid whey consisted of both thiol/disulphide and non-thiol/disulphide mediated reactions. Fourier transform infrared data characterised this protein aggregation as a  $\beta$ -sheet attraction causing subtle changes in the secondary structure. In contrast, [...]

Source : [sciencedirect](#)

### **Alternative proteins**

#### **WO/2017/044966 - Methods and systems for processing a high-concentration protein product from a microcrop and compositions thereof - PARABEL LTD – 16/03/2017**

The present disclosure relates, according to some embodiments, to methods and systems for processing a high-concentration protein product from a microcrop (e.g., aquatic species, Lemna) and compositions thereof [...]

Source : [Wipo](#)

#### **Abstract - Enzyme-assisted extraction of proteins from Citrus fruits and prediction of their cultivar using protein profiles obtained by capillary gel electrophoresis – 02/2017**

The suitability of protein profiles established by capillary gel electrophoresis (CGE) as a tool to discriminate between 11 cultivars of Citrus (orange and tangerine) peel and pulp was evaluated in this work. Before CGE analysis, different extraction buffers (which included enzyme-assisted treatments) were compared. The best results were achieved using [...]

Source : [sciencedirect](#)

#### **Abstract - Biorefinery of microalgal soluble proteins by sequential processing and membrane filtration – 02/2017**

A mild biorefinery process was investigated on the microalga *Nannochloropsis gaditana*, to obtain an enriched fraction of water soluble proteins free from chlorophyll. After harvesting, a

100 g.L<sup>-1</sup> solution of cells was first subjected to cell disruption by either high-pressure homogenization (HPH) or enzymatic treatment (ENZ). HPH resulted in [...]

Source : [sciencedirect](#)

**Abstract - Protein recovery from potato processing water: Pre-treatment and membrane fouling minimization – 02/2017**

Extracting desirable potato proteins from potato processing industry water that contained other major components such as starch and fibre was investigated using membrane processes. The method was assessed based on the recovery yield, concentrating the protein and minimising the fouling by different operating conditions and combination of pre-treatments. [...]

Source : [sciencedirect](#)

**Abstract – Understanding leaf membrane protein extraction to develop a food-grade process – 17/02/2017**

Leaf membrane proteins are an underutilised protein fraction for food applications. Proteins from leaves can contribute to a more complete use of resources and help to meet the increasing protein demand. Leaf protein extraction and purification is applied by other disciplines, such as proteomics. Therefore, this study analysed proteomic extraction methods for membrane proteins as an inspiration for a food-grade alternative process. Sugar beet leaves were extracted with [...]

Source : [sciencedirect](#)

**Trans-sector**

**WO2017044400 - Continuous process for separation of proteins - Orochem Technologies, Inc – 16/03/2017**

Disclosed is a continuous process for separating or extracting proteins from a low grade mixture of a protein of interest, other proteins, impurities, and salts in a continuous simulated moving bed separation process. The invention provides for direct extraction of heme protein and plant protein from a crude mixture of such proteins, other proteins, impurities and salts using the chromatographic technique of simulated moving bed (SMB) continuous chromatography. [...]

Source : [wipo](#)

**Call for applications: “Innovate to develop people demand for plant-based proteins products” – 14/03/2017**

Village By CA North of France is launching the first european call for applications on the topic “Innovate to develop people demand for plant-based proteins products”. Village by CA North of France, part of a unique 30+ accelerators network throughout France being developed by Credit Agricole Group, is launching on February 27th 2017 a call for applications “Innovate to develop people demand for plant-based proteins products” with its partners Bonduelle, Sodexo, Université

Catholique de Lille, Groupe Rossel- La Voix Médias, Eurasanté and the Nutrition Health Longevity Cluster (NHL). This call for projects is the first of its kind on this topic in Europe, and earns the support of IAR, the French bio-economy cluster. [...]

Source : [iyp2016](#)

#### **US20170065962 - Protein adsorbent - Asahi Kasei Chemicals Corporation – 09/03/2017**

A method for producing a protein adsorbent comprising a substrate and a molecular chain fixed on the surface of the substrate is disclosed. The method comprises, in this order: a dry-heat treatment step of heating a pretreatment adsorbent comprising the substrate and the molecular chain fixed on the surface of the substrate, in which the molecular chain contains a weak electrolytic ion-exchange group; and a wet-heat treatment step of heating the pretreatment adsorbent in a moistened state with a liquid or steam to obtain the protein adsorbent. [...]

Source : [Wipo](#)

#### **Clean Label and Protein – 07/03/2017**

As consumers become ever more label savvy, demand for foods with fewer ingredients is growing – but how to achieve this whilst keeping food cheap, convenient, and tasty? Aidan Craigwood thinks that to get back to ‘real’ foods we’ll need to use chemistry to coax more properties out of fewer ingredients... It seems nearly impossible to make the “right” choice about what to eat nowadays. Changing food trends, conflicting media reports, and ever-evolving official guidance make food decisions confusing at best, and overwhelming at worst. [...]

Source : [labnews](#)

#### **EP3137484 - Integrated continuous biomanufacturing process - NOVO NORDISK AS - 08/03/2017**

The invention is a process and apparatus thereto for the end-to-end and continuous production of a purified protein, the process comprising the use of an integrated apparatus comprising a first and second processing unit having continuous and matched outflow and inflow, thereby providing for a means of integration of a protein cultivation system and chromatographic systems.

Source : [Wipo](#)

#### **Functional Flour Is a New Growth Opportunity – 22/02/2017**

Having enhanced nutrient quantities, functional flours offer added benefits to consumers. The flour types used in this growing market are analyzed, as well as applications, market drivers, restraints, and revenue shares and forecasts. [...]

Source : [worldbaker](#)

### **Korys Acquires Ojah BV, Invests in Meat Alternatives – 16/02/2017**

Korys, together with the management of Ojah BV, have announced the acquisition of Ojah BV, a pioneer in the production of the latest generation of textured meat alternatives. Ojah's innovative and sustainable approach to some of the most pressing challenges in the food supply chain proved to be a perfect match with Korys' core values. [...]

Source : [foodingredientfirst](http://foodingredientfirst)

## 3. Formulation and application development

### *Food applications*

#### **Abstract - Consumer perception and behaviour regarding sustainable protein consumption: A systematic review – 03/2017**

The present systematic review identified 38 articles to answer the following three research questions: 1) Are consumers aware that meat consumption has a large environmental impact? 2) Are consumers willing to reduce meat consumption or substitute meat with an alternative? 3) Are consumers willing to accept meat substitutes and alternative proteins, such as insects or cultured meat?

Source : [sciencedirect](#)

#### **Abstract - Improved stabilization of nanoemulsions by partial replacement of sodium caseinate with pea protein isolate – 03/2017**

In this research, pea protein isolate (PPI) was used to partially replace sodium caseinate (SC) in the formation and long-term stabilization of 5 wt% oil-in-water nanoemulsions. Both SC and PPI alone and their 1:1 mixture, at various total protein concentrations, were used to prepare the nanoemulsions using a high-pressure homogenizer. The presence of both the proteins at the oil droplet interface was [...]

Source : [sciencedirect](#)

#### **Abstract - Past, present and future: The strength of plant-based dairy substitutes based on gluten-free raw materials**

Plant-based foods are gaining popularity and the market is developing fast. This trend is based on several factors, like the change of lifestyle, interest in alternative diets, and the increasing awareness about sustainable production of food and especially proteins. Plant-based dairy substitutes can serve as an option to traditional food products, meeting many of these interests. However, the market is in its infancy and needs to progress. Trends show, that the market will change from being focused on mainly soya, almond and rice-based products, due to their unsustainable farming, and nutritional concerns, like genetic modification and low protein content. [...] Source : [sciencedirect](#)

#### **Abstract - Coalescence of protein-stabilised emulsions studied with microfluidics – 25/03/2017**

Emulsion droplet formation occurs in milliseconds to seconds when emulsifier adsorption is often not yet completed, therewith allowing coalescence to take place. Because of these short time-scales, it is difficult to quantify adsorption and coalescence during processing. A microfluidic device can be used to measure coalescence shortly after droplet formation in laminar flow, and this device

was used to assess coalescence of oil-in-water emulsions stabilised with dairy proteins ( $\beta$ -lactoglobulin, whey protein isolate, and oxidised whey protein isolate). Different microfluidic designs were used to vary the protein adsorption time prior to droplet collision. [...]

Source : [sciencedirect](#)

### **Taking on off-flavor issues in plant proteins – 23/03/2017**

The surge continues for new products containing plant proteins, especially pulses like peas. Whether the products succeed most certainly will depend on taste. Technology, growing techniques and company partnerships all are tools that may be used to avoid any of the plant proteins' off-flavors. [...]

Source : [foodbusiness](#)

### **Abstract - Gastrointestinal Fate of Emulsion-based $\omega$ -3 Oil Delivery Systems stabilized by Plant Proteins: Lentil, Pea, and Faba bean Proteins – 22/03/2017**

Functional foods are being fortified with bioactive lipids to improve human health. The formulation of these products from plant-based ingredients, rather than synthetic or animal-based ones, is often preferred by consumers. However, there is concern that encapsulation of bioactive lipids using plant-based ingredients may decrease their oral bioavailability. [...]

Source : [sciencedirect](#)

### **REBBL Launches New Plant-Based Protein Elixirs – 22/03/2017**

With one kilogram of animal protein requiring one hundred times the amount of water to produce the equivalent plant-based protein, shifting to a plant-based diet is more critical than ever both for health and the environment. Innovative and rapidly growing functional beverage company REBBL® continues to revolutionize the beverage industry with its super-herbed, ethically sourced elixirs and is launching the first ever adaptogen-powered Protein Elixirs. This new line utilizes a synergistic blend of Clean Complete Plant Protein™ from sunflower, pea, and pumpkin enlivened with REBBL's signature adaptogen blend of maca, ashwagandha, and reishi. [...]

Source : [bevnet](#)

### **Abstract - Whey protein mouth drying influenced by thermal denaturation – 21/03/2017**

Whey proteins are becoming an increasingly popular functional food ingredient. There are, however, sensory properties associated with whey protein beverages that may hinder the consumption of quantities sufficient to gain the desired nutritional benefits. One such property is mouth drying. The influence of protein structure on the mouthfeel properties of milk proteins has been previously reported. This paper investigates the effect of thermal denaturation of whey proteins on physicochemical properties (viscosity, particle size, zeta-potential, pH), and relates this to the observed sensory properties measured by qualitative descriptive analysis and sequential profiling. [...] Source : [sciencedirect](#)

**Abstract - Strategies for the discovery and identification of food protein-derived biologically active peptides – 21/03/2017**

The widespread application of protein-derived bioactive peptides (BAPs) with health promoting properties in human nutrition is currently limited. This may be due to the fact that several challenges exist in the discovery and identification of BAPs both in vitro and in vivo. [...]

Source : [sciencedirect](#)

**Elmhurst Milked Launches Vegan Milk Line – 16/03/2017**

Vegan milk line Elmhurst Milked launched last week at trade show Natural Foods Expo West in Anaheim, CA. The line—which is comprised of four nut-based flavors including cashew, walnut, almond, and hazelnut—was developed by Henry Schwartz, who previously operated family-owned dairy plant Elmhurst Dairy. [...]

Source : [vegnews](#)

**WO2017044601 - Powdered nutritional product containing branched-chain amino acids and a sugar alcohol – Abbott Laboratories - 16/03/2017**

Powdered nutritional products containing branched-chain amino acids and a sugar alcohol are provided. The branched-chain amino acids in the powdered nutritional product exhibit improved solubility and thus improved dissolution upon reconstitution of the powdered nutritional product.

[...] Source : [Wipo](#)

**Recent developments in new protein sources – 15/03/2017**

A proliferation of protein sources has made an impact on the food industry in recent years. Formulators may wish to do some homework on the ingredients, be they sourced from peas, beans or even algae. Is the supply of the protein source increasing? At what percentage may the ingredients be used in applications? Perhaps most importantly, how do they affect taste?

Experimenting with new protein sources may continue. The market for alternative proteins [...]

Source : [foodbusinessnews](#)

**Unilever Joins Plant Meat Matters Consortium – 15/03/2017**

Food development project Plant Meat Matters (PMM) welcomed several new partners to its consortium—including multinational food corporation Unilever, ingredient suppliers Avril and Ingredion, and flavor specialists Givaudan. The project is spearheaded by researchers at Wageningen University who are working to develop a plant-based alternative to steak. The first iteration of PMM's product was unveiled at Netherlands-based meat alternative company The Vegetarian Butcher's "Plant-Based Plant" facility in 2015. [...]

Source : [vegnews](#)

### **General Mills led a \$6.5 million investment round in probiotics startup Farmhouse Culture – 14/03/2017**

General Mills' investment arm 301 Inc. led a \$6.5 million investment round in plant-based probiotic startup Farmhouse Culture. "Our collective goal is for consumers across the country to have access to the full line of these products," 301 Inc.'s general manager John Haugen said. California-based Farmhouse Culture produces fermented products such as sauerkraut (including vegan kimchi), probiotic beverages, and plant-based snacks. [...]

Source : [vegnews](#)

### **Plant-based Sector Pulls in \$5 Billion in Sales – 13/03/2017**

A recent report by data company SPINS revealed that the plant-based industry made more than \$5 billion in sales over a 52-week period ending on January 22, 2017. The report analyzed sales within the industry in four categories—including non-dairy beverages, meat alternatives, cheese alternatives, and tofu products. SPINS found that plant-based milk products grew by 13.1 percent and captured \$4.3 billion in sales last year. [...]

Source : [vegnews](#)

### **Biena Foods adds chocolate to chickpeas – 10/03/2017**

Debuting at Natural Products Expo West, a new range of snacks from Biena Foods combines chickpeas and chocolate. The product line is positioned as a permissible indulgence, featuring crunchy roasted chickpeas covered in dark chocolate, milk chocolate or salted caramel. [...]

Source : [foodbusinessnews.net](#)

### **UC Berkeley is Giving \$10K to Students That Develop Novel Plant-Based Meats and Seafood – 28/02/2017**

The Good Food Institute, a major advocate of plant-based and alternative meat products for the betterment of the world, has teamed up with UC Berkeley's Sutardja Center for Entrepreneurship and Technology (SCET) to develop a Challenge Lab course and a competition centered around the development of plant-based proteins. The Challenge Lab course is entitled "Innovative and Sustainable Plant-Based Protein: How to Produce More and Better Plant-based Meat," and lasts all semester. [...]

Source : [foodbeast](#)

### **Pea Protein Market to Reach \$104 Million by 2026 – 10/03/2017**

Analysts at research firm Future Market Insights (FMI) predict that revenues from the pea protein market will surpass \$104 million by 2026, with a compounded annual growth rate of 12 percent. One reason for this growth is the demand for replacing allergens and animal products in baking.

While North America currently has the highest global demand for pea protein, FMI predicts that manufacturers will be targeting developing economies in the future. [...]

Source : [vegnews](#)

#### **WO/2017/040610 - High protein puffed whole egg snack – Cargill - 09/03/2017**

A snack food is prepared by a unique process comprising extruding an extrusion composition under heat and pressure to form an expanded, cooked, egg and added-protein snack food, wherein the extrusion composition comprises a) whole liquid egg present in an amount of from about 5 to about 25% by weight based on the total weight of the extrusion composition, b) an added protein concentrate or isolate selected from the group consisting of rice protein, soy protein, whey protein or mixtures thereof, in an amount so that the total protein present in the expanded, cooked, egg and added-protein snack food is from about 25 to about 40 % by weight, and c) starch in an amount sufficient to provide an expanded, cooked, egg and added- protein snack food having a density no greater than about 300 grams per cubic inch.

Source : [Wipo](#)

#### **Abstract - Utilizing whey protein isolate and polysaccharide complexes to stabilize aerated dairy gels – 09/03/2017**

Heated soluble complexes of whey protein isolate (WPI) with polysaccharides may be used to modify the properties of aerated dairy gels, which could be formulated into novel-textured high-protein desserts. The objective of this study was to determine the effect of polysaccharide charge density and concentration within a WPI-polysaccharide complex on the physical properties of aerated gels. [...]

Source : [sciencedirect](#)

#### **French company Tereos - Opens Plant-Based Meat Facility – 08/03/2017**

French company Tereos opened its first plant-based meat-making facility in Alsace, France last week. The facility will produce plant-based protein under the name Le Sauté Végétal, which will be made from wheat proteins and chickpea flour that will be sold in shredded form. “The inauguration of this industrial pilot unit is an important step in the work Tereos has been conducting around plant proteins for many years,” Tereos CEO Alexis Duval said. [...]

Source : [vegnews](#)

#### **Canadian Cricket Protein Company Launches on Kickstarter – 06/03/2017**

Coast Protein, Western Canada's first cricket protein company launched their crowdfunding campaign through Kickstarter and hit their goal in less than 72 hours. The company plans to scale production, improve packaging, and add cricket protein powders for smoothies to their product offering. A new kind of protein that's as good for the environment as it is for your body. Dairy-free, gluten-free and environmentally conscious. (CNW Group/Coast Protein) [...]

Source : [prnewswire](#)

**Abstract - The analysis of the causes of protein precipitate formation in the blanched soymilk – 01/03/2017**

This paper explored the causes of protein precipitate formation in blanched soymilk prepared by blanching soybeans through studying the changes in composition and amount of protein particles during its thermal processing. Compared with the traditional method of preparing soymilk, blanching changed the thermal aggregation behavior of protein particles. Results showed that when blanching was applied to soybeans,  $\beta$ -conglycinin (7S) was denatured in the blanched soybeans, which resulted in the fixation and aggregation of 7S prior to the grinding processing. Therefore, 7S lost its inhibitory ability on the growth of other protein aggregation, explaining the increased insoluble precipitates in the blanched soymilk.

Source : [sciencedirect](#)

**EP3135125 - Beta-lactoglobulin peptides for treating cow's milk protein allergy – 01/03/2017**

The present invention relates to a nutritional, preferably enteral, composition for use in the treatment of cow's milk allergy in infants allergic to cow's milk containing specific beta-lactoglobulin peptides, which are able to reduce, in particular abolish the acute symptoms of cow's milk protein allergy.

Source : [Wipo](#)

**EP3133933 - Assembly of at least one plant protein and at least one milk protein, production thereof and uses of same - Roquette frères/Ingredia – 01/03/2017**

The invention relates to a novel method for producing an assembly of at least one milk protein and at least one plant protein in different food matrices or compositions. The invention also relates to the assembly of at least one milk protein and at least one plant protein produced in this way, and to the use of said assembly.

Source : [Wipo](#)

**Using a proprietary processing technique and flavor-masking technology, Kerry launches a new plant protein solution -03/03/2017**

Using a proprietary processing technique and Kerry flavor-masking technology to address the grainy, chalky texture and mask the characteristic off-notes and bitterness traditionally associated with plant-based proteins, Kerry has come up with a new plant-protein solution. ProDiem delivers complementary combinations of plant proteins, including pea, rice and oats, to improve the protein quality by delivering an amino acid profile closer to that of animal protein. [...]

Source : [foodingredientfirst](#)

**Insekt KBH launches an insect protein juice – 22/02/2017**

Co-founded by molecular biologist Jakob Lewin Rukov and business developer Philip Price, the start-up's circular economy came about when Price and Rukov were approached by Bioark, a

Copenhagen-based company that works with local restaurants and small food companies to develop self-sustaining food loops that combine bio-inspired technologies with local nutrient streams. Bioark helped Insekt KBH operate in a sustainable food loop that involves coffee, mushrooms, tomatoes and crickets. [...]

Source : [foodnavigator](#)

### **2x Partners and General Mills Invest in No Cow Bar Maker D's Naturals – 21/02/2017**

Today 2x Consumer Products Growth Partners (2x Partners) and General Mills' new business and venture arm 301 INC announced an investment in D's Naturals, creators of the "No Cow" plant-based protein bars and Fluffbutter, a protein-infused nut butter. D's was started in 2015 by Daniel "D" Katz in Cincinnati, Ohio. The line focuses on offering protein rich products that are also low in sugar. Currently the No Cow bars are sold in over 10,000 retailers including 6,000 CVS stores and 4,000 GNC and Vitamin Shoppe locations. [...]

Source : [projectmosh](#)

### **PGP International has launched a new 60% pea protein crisp – 24/02/2017**

PGP International has launched a new 60% protein crisp which is set to provide food manufacturers with a competitive edge in a market where energy-boosting protein, weight management and clean eating is in high demand. [...]

Source : [Asiafoodjournal](#)

### **Canada's Maple Leaf Foods to Acquire U.S.-Based Lightlife - 23/02/2017**

The acquisition of Lightlife provides Maple Leaf with a leading market position and brand in the United States in a category that is outpacing growth in the broader packaged foods sector. Lightlife specializes in vegetarian sausages and burgers. [...]

Source : [foodprocessing](#)

**EP3131406 - Plant based meat structured protein products - Savage river inc dba beyond meat – 22/02/2017**

Provided are food products having structures, textures, and other properties similar to those of animal meat. Also provided are processes for producing such food products. The processes comprise producing the food products under alkaline conditions.

Source : [Wipo](#)

**EP3131408 - Nutrient-dense meat structured protein PRODUCTS - Savage river inc dba beyond meat - 22/02/2017**

Provided are nutrient-dense meat structured protein products providing complete sources of protein and essential nutrients. Also provided are methods and processes for producing such nutrient-dense meat structured protein products. Also provided are nutrient-dense condiments that can be packaged with meat structured protein products or nutrient-dense meat structured protein products.

Source : [Wipo](#)

**Abstract - Safety evaluation of soybean protein isolate oxidized by a hydroxyl radical-generating system – 20/02/2017**

The oxidative modification of soybean protein isolate (SPI) induced by a hydroxyl radical-generating system (HRGS) has a broad range of applications. However, few toxicology studies exist on this material. The safety of HRGS-oxidized SPI was assessed using subchronic [...]

Source : [sciencedirect](#)

### **Feed applications**

#### **Abstract - The influence of oil extraction process of different rapeseed varieties on the ileal digestibility of crude protein and amino acids in broiler chickens – 24/03/2017**

The current study assessed the effect of rapeseed variety and oil extraction process on the apparent and standardised ileal digestibility (AID, SID) of crude protein (CP) and amino acids (AA) in rapeseed co-products in broiler chickens. PR46W21 and DK Cabernet rapeseed varieties were de-oiled by soft and standard hexane extraction, producing soft rapeseed meal (SRSM) and rapeseed meal (RSM), respectively. The soft, non-standard hexane extraction method was designed to reduce heat treatment that occurs prior to hexane extraction in order to maximise potential genetic differences in digestibility values of rapeseed co-products. [...]

Source : [sciencedirect](#)

#### **By-pass protein in dry cow diets proven to boost milk yields – 21/03/2017**

Farmers are being urged to plan dry cow rations with care, as investing in the dry period is critical to reaping the benefits in the next lactation. Bethany May, ruminant nutritionist at Trident Feeds, said: "Post-calving, cows often receive close attention and top quality diets, yet pre-calving, it's easy to underestimate the influence the ration can have on the proceeding lactation." "It's critical that dry cows receive enough quality protein in the diet, when fed with a silage or straw base, to maximise outputs when entering lactation." "There are two types of protein available to the cow; rumen degradable protein (RDP) and digestible undegraded (DUP) by-pass protein. [...]

Source : [somersectountygazette](#)

#### **US20170042187 - Method of making microalgal-based animal foodstuff supplements, microalgal-supplemented animal foodstuffs and method of animal nutrition - Solarvest BioEnergy Inc 21/03/2017**

The present invention is to a safe, biodegradable trace metal binding system that effectively delivers chromium, cobalt, copper, iron, manganese, molybdenum, selenium and zinc to animals. The method of preparing an animal foodstuff composition involves the steps of: providing transgenic algal cells comprising a nucleotide sequence, the nucleotide sequence being capable of expressing a non-native metal-binding protein in the transgenic algal cells; binding the metal-binding protein with at least one metal so as to produce a metal-bound adduct of the metal-binding protein; and admixing the metal-bound adduct with animal foodstuff. [...]

Source : [Wipo](#)

### **Salmon sector seeks avian opportunities – 20/03/2017**

Avian proteins have been included in the diets offered to the Canadian, Chilean and Australian salmon farming sectors for more than a decade. Although they are permitted to be used in the EU, concerns persist about consumer acceptance of the idea and they have not been used by British salmon producers since 1997, in the wake of the BSE scare, when feed producers were encouraged to remove land animal proteins (LAPs) from their raw material options. The Dunblane workshop marked the initial phase of a project – [...]

Source : [thefishsite](#)

### **Mealworm meal shows promise for fish – 17/03/2017**

Many feed trials with insects for use in livestock diets focus on the black soldier fly. However, new insights show better performance results with mealworms. Here we share some of the latest insights concerning a mealworm meal called TMP and its results in rainbow trout and the way it reacts to the feed extrusion process. [...]

Source : [allaboutfeed](#)

### **DuPont brings fast-acting enzyme solution to make egg production more profitable – 14/03/2017**

Today, DuPont Industrial Biosciences (DuPont) announced the launch of DuPont™ Aextra® XBPHY, a new enzyme solution dedicated to the Indian layer market, one of the fastest growing egg markets in the world. [...]

Source : [benzinga](#)

### **Decrease in E.U. compound feed production expected in 2016 – 28/02/2017**

The industrial compound feed production for farmed animals in the E.U. in 2016 reached an estimated level of 153.4 million tonnes, down 1% from 2015, according to data provided by European Feed Manufacturers (FEFAC) members. [...]

Source : [world-grain](#)

### **SARVAL provides the option of lower ash levels within its protein products – 24/02/2017**

Historically, protein products have contained high levels of ash, due to the nature of the animal by-product raw materials used, according to Ashley Burdock, Commercial Manager at SARVAL, a UK-based supplier of protein ingredients to the pet food market. SARVAL provides the option of lower ash levels within its protein products. [...]

Source : [petfoodindustry](#)

**WO/2017/029575 - Semi-moist food compositions that maintain soft texture - Nestec SA – 23/02/2017**

A soft semi-moist composition, for example semi-moist extruded kibbles, is formulated to substantially maintain softness through storage in a blend with dry food compositions. Softness is maintained by hindering formation of protein-starch complexes during storage. In an embodiment, the soft semi-moist food composition comprises at least 0.5% of a free amino acid, such as glutamate, and the soft semi-moist composition has a pH at which the free amino acid is charged. In some embodiments, hydrolyzed animal or vegetable substrates are included to provide one or more free amino acids that are charged at the pH of the semi-moist food composition and maintain softness of the semi-moist food composition.

Source : [Wipo](#)

**ADM partners with University of Illinois to focus on pet food quality – 13/02/2017**

ADM Animal Nutrition, a division of Archer Daniels Midland Co. (ADM), has teamed up with the University of Illinois Department of Animal Sciences to further develop and enhance ADM's portfolio of high-quality pet food ingredients and premixes. [...]

Source : [world-grain](#)

**Cosmetic applications**

**Lucas Meyer Cosmetic launches a new Oil soluble photoprotector – 21/03/2017**

Called Melinoil, the company's photoprotector is said to be an oil soluble version of an MSH biomimetic peptide with a wide variety of hair and skin care applications. [...]

Source : [cosmeticsdesign-europe](#)

**SensAmone P5 by Mibelle for sensitive skin – 21/03/2017**

SensAmone P5 is a cosmetic active ingredient designed to calm sensitive skin that overreacts to stimuli such as heat, pH changes and chemicals. Since about half of the population considers their skin to be sensitive, [...]

Source : [cosmeticsdesign-europe](#)

**Creative Peptides Made Some Changes to its Cosmetic Peptides – 08/03/2017**

Creative Peptides has long been providing cosmetic peptides for both research use and production needs. However, until recently, the company set their plan in improving this branch of peptides to meet the increasing needs both in scientific level and manufacture scale. [...]

Source : [digitaljournal](#)

### **Lexli Introduces A-Firm-Ative Anti-Aging Peptide Serum – 13/03/2017**

Lexli International, provider of the premier line of aloe-based skin care, today introduces a new weapon in the fight against aging skin: A-Firm-Ative Anti-Aging Peptide Serum. This potent formulation features Lexli's signature base of moisturizing pharmaceutical-grade aloe vera in combination with vitamins and an advanced peptide blend that has been clinically proven to improve the appearance of fine lines and wrinkles, especially in the forehead area and crow's feet. [...]

Source : [prweb](#)

### **Italy snail farmers enjoy boom from cosmetics – 15/02/2017**

Recent reports suggest that snail farming has increased by as much as 325% in Italy over the past two decades, driven mainly by the booming demand for snail slime in cosmetics. [...]

Source : [cosmeticsdesign-europe](#)

### **Spanish scientists found out a natural sunscreen based on microsporine-like amino acids – 02/02/2017**

Now, Ardoiz, Cristina García-Iriepa, Pedro Campos, and Diego Sampedro of the Universidad de La Rioja in Logroño and José Aguilera and Enrique Herrera-Ceballos of the Universidad de Málaga, have now developed an entirely new family of UVA and UVB filtering compounds based on natural sunscreen substances found in algae and cyanobacteria. [...]

Source : [algaeworld](#)

## **Technical applications**

### **Abstract - Rheological properties of soy protein isolate solution for fibers and films – 03/2017**

For the first time, rheological behavior of soy protein isolate (SPI) solution with high concentration for fibers and films was studied. [...]

Source : [sciencedirect](#)

### **Worm-inspired material strengthens, changes shape in response to its environment – 20/03/2017**

A new material that naturally adapts to changing environments was inspired by the strength, stability, and mechanical performance of the jaw of a marine worm. The protein material, [...]

Source : [scienceblog](#)

### **An extract from tree bark increases the strength of the tooth material dentin, potentially helping dental fillings last longer – 20/03/2017**

A mouth full of metal is becoming a thing of the past. Modern tooth-colored fillings made from resin-based composites can attractively repair the surface of teeth, but they often crack or fail after five to eight years. Replacement means more drilling, costing healthy tooth tissue. Now, researchers

have characterized a plant extract that may strengthen the interface between tooth and filling, extending the lifespan of dental restorations and minimizing tooth loss (J. Org. Chem. 2017, DOI: 10.1021/acs.joc.6b02161). [...]

Source : [ACS](#)

**US20170066952 - Protein-containing adhesives, and manufacture and use thereof - Evertree 09/03/2017**

The invention provides protein adhesives and methods of making and using such adhesives. The protein adhesives contain ground plant meal or an isolated polypeptide composition obtained from plant biomass.

Source : [wipo](#)

**US20170065497 - Organic compounds - Givaudan - 03/03/2017**

A microcapsule composition consisting essentially of core material enclosed in a shell, wherein the shell comprises a complex coacervate formed from at least two oppositely charged colloids, one of which is a protein, and wherein the protein is cross linked to a hardening agent by amide groups.

Source : [Wipo](#)

**US20170058132 - Biodegradable Fire Resistant Foam –Multi - Inc - 02.03.2017**

The instant invention is a fire protectant composition comprising water, a surfactant, a water-soluble polymer, casein, and a calcium salt. [...]

Source : [Wipo](#)

**Recent development in silk spider – 20/02/2017**

Adidas, The North Face, and Patagonia are among the brands jostling to become the first to launch a mass-market product made from synthetic spider silk. Adidas is racing to introduce a biodegradable running shoe made from the silk later this year. The North Face's Moon Parka with waterproof spider silk fiber could become a must-have for eco-minded fashionistas.

But don't ditch your old nylon running shoes and jackets quite yet. Behind the scenes, manufacturers are having problems translating lab-based processes for the novel material to commercial scale. [...]

Source : [ACS](#)

**WO2017027474 - Nano-encapsulation using gras materials and applications thereof- The trustees of princeton University – 16/02/2017**

In one aspect, methods of preparing composite nanoparticle compositions are described herein. For example, in some embodiments, a method comprises providing a zein solution stream, an organic fluid stream including at least one additive and at least one buffer fluid stream. [...] -Source : [Wipo](#)

**US09566365 - Silk fibroin and polyethylene glycol-based biomaterials – 14/02/2017**

This invention relates to methods and compositions for preparation of silk-PEGs based biomaterials through crosslinking by chemically reacting active polyethylene glycols (PEGs) possessing different chemical groups (e.g., thiols and maleimides functionalized PEGs) that are additionally stabilized by the beta-sheet formation of silk fibroin. [...]

Source : [wipo](#)

**Chemists have developed a powerful new method of selectively linking chemicals to proteins – 09/02/2017**

Chemists have developed a powerful new method of selectively linking chemicals to proteins, a major advance in the manipulation of biomolecules that could transform the way drugs are developed, proteins are probed, and molecules are tracked and imaged. The new technique, called redox activated chemical tagging (ReACT), is described in the Feb. 10 issue of the journal Science. Developed at the Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab), it could fundamentally change the process of bioconjugation, the process by which chemicals and tags are attached to biomolecules, particularly proteins. [...]

Source : [sciencedaily](#)

## 4.Regulation & labels

### **Enterra: Canada approves dried larvae from insects for fish feed – 16/02/2017**

Enterra has received approval from the Canadian Food Inspection Agency (CFIA) to sell its whole dried Black Soldier Fly (BSF) larvae in feed for salmonids. The authorization, said the Canadian insect feed manufacturer, means it can now market the product for use in feed for farmed salmon, trout and arctic char. [...]

Source : [feednavigator](#)

### **Insect sector outlines 2017 plans - 20/03/2017**

At its General Assembly meeting held on 15 March, IPIFF, the European Umbrella Organisation representing the interests of Insect Producers for Food and Feed, outlined its policy priorities for 2017 and beyond. In the wake of the green light given by EU Member States on the use of insect proteins as fish feed in Europe, IPIFF commits to assist insect producers in the implementation of the legislation, which will apply as from 1st July 2017. [...]

Source : [allaboutfeed](#)

### **The European Commission plans to set maximum levels for acrylamide in ready-to-eat foods such as baby foods, crisps and breakfast cereals – 14/03/2017**

The Institute of Food Science & Technology (IFST) has updated its Information Statement on Acrylamide as the EU Commission moves to a decision on the regulation of acrylamide. The European Commission plans to set maximum levels for acrylamide in ready-to-eat foods such as baby foods, crisps and breakfast cereals. [...]

Source : [foodnavigator](#)

### **The EU Novel Food System Aims to Become Faster—and Better – 13/03/2017**

The general definition of a novel food remains unchanged in this new law—namely, that a novel food is considered an ingredient not used for human consumption to a significant degree within the European Union before May 15, 1997, the date the original novel food regulation, (EC) No 258/97, went into force. [...]

Source : [nutritionaloutlook](#)

### **New Standard for French manufacturers (AFNOR) of soy juice – 13/03/2017**

A new certification for French manufacturers of soy juice which will give consumers greater clarity in a confusing space, says Agrifood certifying body Afnor. The standard specifies which production

methods, nutritional composition as well as the enzymatic method that should be used to determine the lactose content of soy juice. [...]

Source : [Foodnavigator](#)

**Global coalition Protein Challenge 2040 plans to tackle the inefficiency of animal agriculture through various climate-saving initiatives – 03/03/2017**

Nonprofit sustainability consulting firm Forum of the Future (FOF) recently created global coalition Protein 2040 Challenge. The initiative aims to develop solutions to feeding the growing global population—estimated to reach more than 9 billion by 2050—by encouraging collaboration between key businesses and NGOs in the animal, plant, and alternative protein (such as lab-grown meat) sectors. [...]

Source : [Vegnews](#)

## 5. Events

### 4TH ANNUAL PEPTIDES CONGRESS 2017

Dates : April 24-25, 2017

Location : London - UK

This highly anticipated conference provides a unique opportunity for over 400 senior-level delegates to engage in scientific discussions about the current research results and latest advancements that help the industry going forward. Over 25 presentations and case studies focusing on the key advancements in peptides technologies, chemistry, formulation & delivery as well as peptide therapeutics. Two-day interactive conference addressing three main themes:

- Recent Progress in Peptide Technologies & Manufacturing
- Peptide Discovery & Development: Peptide Chemistry, Formulation & Delivery
- Advances in Peptide Therapeutics

Source : [peptides-congress](#)

### Vitafoods Europe 2017

Dates : May 9-11, 2017

Location : Geneva - Switzerland

Vitafoods Europe, the annual event where the entire nutraceutical supply chain does business, attracts 18,500+ of the most senior decision-makers across the globe within four key industry areas; Ingredients & Raw Materials, Contract Manufacturing & Private Label, Services & Equipment and Branded Finished Products. With 1,000+ global suppliers providing 1,000's of innovative products, Vitafoods Europe provides visitors the opportunity to source ingredients, raw materials, dietary supplements, functional food & beverages and high quality services & equipment to help grow their business.

Through strong event content and educational attractions, visitors can gain crucial advice and expertise on market trends, regulatory complexities, packaging and labelling challenges and market drivers, helping make better strategic business decisions.

Source : [Vitafood](#)

### Gluten Free Food Expo 2017

Dates : May 20-21, 2017

Location : Brisbane – Australia

Our 2016 show was our largest ever, with reports that the Expo was one of Queensland's fastest growing food and lifestyle events. We are pleased to report that: - we had record attendance - 5,216 up 66% - attendees stayed longer, reflecting the quality of exhibitors and presentations, & - spent more than ever on exhibitor products. At Coeliac Queensland our mission is to enhance the quality-

of-life of people with Coeliac Disease and those people medically diagnosed as requiring a gluten free diet. The Gluten Free Food Expo - is our major annual event, raising much needed funds to continue our valued not-for-profit work, and also informing the public as broadly as possible. Food and Diet are now of such great interest to the public. Early stand bookings are already being received. I sincerely recommend this Expo to you and to your business for communicating with these consumers and our valued members.

Source : [glutenfreefoodexpo.org](http://glutenfreefoodexpo.org)

### **2017 Protein Trends & Technologies Seminar**

Dates : May 23 - 24, 2017

Location : Itasca, Illinois, USA

The Global Food Forums® Protein Trends & Technologies Seminar is North America's largest conference dedicated to protein ingredients, their market and their applications technologies.

The 2016 Protein Trends & Technologies Seminar hosted over 250 attendees between its Pre-conference Program: Business Strategies and Technical Program: Formulating with Proteins. A record-breaking 253 registrants at the 2016 seminar were drawn by impartial speakers providing must-have information; a sampling station of new, innovative protein-centric products; and, relaxed, informal networking activities including 30 tabletop exhibitors. The knowledge gained was invaluable for improving job performance and for competing in today's business environment.

Source : [cvent](http://cvent)

### **Food Innovate**

Dates : May 22-24, 2017

Location : Amsterdam – Netherlands

Innovative companies will explain how you can achieve a cleaner, more natural ingredients label without sacrificing on taste. They will also highlight other ways to align your products and future projects with shifting consumer demands, such as the current health and wellness trend.

In the three days you'll dive deep into the success and failures of real-life product launches and hear from the world's leading food and beverage companies. They will give you valuable advice on how to increase the chances of a successful product launch and avoid being in the 80% that fail.

Source : [foodinnovate](http://foodinnovate)

### **NutrEvent 2017**

Dates : June 15-16, 2017

Location : Lille, France

NutrEvent is the leading European business convention dedicated to innovation in food, nutrition and health gathering 600 actors from research to market, with the objective to promote today's products, process and services and identify tomorrow's innovations.

Source : [nutrevent](http://nutrevent)

## **12th Food Proteins Course 2017 - Food Proteins: Properties, Functionalities & Applications”**

Dates : June 28-30, Las Vegas

Location : Las Vegas , USA

The Course “Food Proteins: Properties, Functionalities & Applications” is designed to give participants a theoretical and practical overview of vegetable and animal proteins currently available for food applications and to provide hands-on information about their properties and functionalities. The course is an excellent platform for networking in and with the protein industry. A complimentary dinner is included for all course participants to add more networking opportunities. This course is the only one available of its kind in the USA and elsewhere. The combination of theoretical lectures by industry professionals on a wide range of proteins combined with practical hands-on experience is unique and a real point of difference to other courses available.

Source : [cvent](#)

## **ISPPP 2017 - International Symposium on Separations of Proteins, Peptides and Polynucleotides (ISPPP)**

Dates : July 19-21, 2017

Location : Philadelphia, PA, USA

The ISPPP is a truly international symposium, with alternate meetings organized in Europe and North America. The 36th ISPPP was most recently in Salzburg, Austria, and the upcoming 37th International Symposium for the Separation of Proteins, Peptides and Polynucleotides will take place in Philadelphia, PA, USA, from July 19-21, 2017, in the intimate setting of the Lowes Hotel on Market Street, in downtown Philadelphia. Over the course of the conference, there is ample opportunity to engage presenters, attendees and exhibitors during and after the various presentation formats at the Symposium. In addition to scheduled Lectures there are Posters Sessions, an Exhibition area, expert Tutorials, and catered refreshment breaks. As with past ISPPPs, the meeting is organized to encourage an atmosphere of collegial interactions and to encourage formation of collaborative efforts. As with past events, there will be various social events, including an opening reception and symposium banquet. This year’s ISPPP will be co-chaired by Dr. Barry E. Boyes (Advanced Materials Technologies, Inc.) and Prof. Ron Orlando (Complex Carbohydrate Research Center, University of Georgia), two long-standing supporters of the conference. In addition, a Program Committee and International Conference Committee are working with the chairpersons to assure an exciting and relevant program.

Source : [ISPPP](#)

**Newsletter made by**



Building on more than 10 years of expertise in the bioeconomy as well as in the food and feed ingredients sector, IAR – The French Bioeconomy Cluster – supports companies as well as research and technology centres in their decision making.

Through its large network of experts and in-depth understanding of the business environment of bio-based industries, IAR has developed a large set of tools to back your decision making on strategic orientations : technico-economic studies, state of the art, market studies, technological and stakeholders mapping...

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